

Appln. No. 10/518,137  
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### Abstract

A fly-back type synchronous rectifying switching power supply device in which a rectifying element is turned off before the main switch is turned on even when the on-time of a main switch element is lengthened due to sudden variation of a load. The synchronous rectifying switching power supply device is equipped with a synchronous rectifying element connected to a secondary winding of a transformer in series and driving means including an auxiliary winding for turning on the synchronous rectifying element complementarily with a main switch element between output terminals. A transistor serving as interrupting means for turning off the synchronous rectifying element is provided between the gate and source of the synchronous rectifying element. An off-timing at which the synchronous rectifying element is turned off by the interrupting means is set within a timing range which corresponds to a fixed time after the main switch element is turned on and also is as near as a fixed driving period of the main switch element.